

Kimberlite outcrops have been discovered in two separate areas: the Koidu area in Kono, and the Tongo area, 30 miles to the south. Almost all the Kimberlite bodies are in the unusual form of narrow anastomosing dykes of uncontaminated, porphyritic kimberlite. Five small pipes have been found, which, although they consist principally of typical kimberlite breccia, also contain bodies of inclusion-free kimberlite and breccias of abnormal texture. Underground development of kimberlites has recently begun in the Koidu area. The two kimberlite areas constitute only a very small part of the diamond fields, and some high-grade alluvial deposits are 70 miles from the nearest known kimberlite group. This is in line with data assembled by the Geological Survey, that there are diamond sources in all parts of the fields. The nature of these sources remains unknown, but they are seemingly deficient in the normal indicator minerals, and they may well differ from kimberlites in other respects.

Total resources of alluvial diamonds remaining in the known fields are estimated to be 16.6 million carats, but 6.7 million of these are in deep gravels whose exploration will entail heavy capital investment and skilled management.

It is considered that several small alluvial fields remain to be found, and a systematic search for these will soon be necessary, if a steady decline in licensed mining is to be averted.

A large percentage of clear and good shaped diamonds produced in Sierra Leone are recovered from the Sewa river. At present the bulk of the remaining alluvial diamonds are located along the Sewa channel in deep pools, pot holes and depressions in rock bars. Irregularities, caused by structural and bedrock compositional varieties control the deposition of diamondiferous gravels in the Sewa channel. The easiest, most economic and efficient method to mine the existing large Sewa channel gravels is by dredging.

After careful study of the geomorphology, bedrock configuration and composition, regional and local structural patterns (faults, fractures, joints, dyke, etc), interpretation of aerial photographs, estimation of existing reserves of diamondiferous gravels, localities A and B have been identified (in order of priority) as the most promising to support a medium to large scale diamond mine.

LOCALITY A:

THE BARMA AREA (SHEET 68)

This Block has been the outstanding producer of alluvial diamonds for many years. Total production to the end of 1995 is estimated to have been almost 3 million carats.